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Dated 14 May 2001

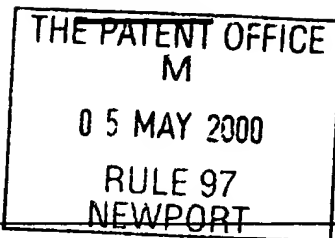
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 P01/7700 0.00-0010929.8

**Request for grant of a patent**

*(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)*



The Patent Office

Cardiff Road  
 Newport

Gwent NP9 1RH

1. Your reference

GW-G29642

2. Patent application number

*(The Patent Office will fill in this part)*

**0010929.8**

**1-5 MAY 2000**

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

**Pace Micro Technology Plc**

Victoria Road  
 Saltaire  
 Shipley  
 BD18 3LF

U.K

Patents ADP number *(if you know it)*

If the applicant is a corporate body, give the country/state of its incorporation

*7588569001*

4. Title of the invention

**Improvements to Communications Device**

5. Name of your agent *(if you have one)*

**Bailey Walsh & Co.**

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

**5, York Place  
 Leeds  
 LS1 2SD**

Patents ADP number *(if you know it)*

**224001**

6. If you are declaring priority from one or more earlier patent applications, give the and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country

Priority application number  
*(if you know it)*

Date of filing  
*(day / month / years)*

7. If this application is divided or otherwise derived from an earlier UK application, the earlier application

Number of earlier application

Date of filing  
*(day / month / years)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer "Yes" if:*

**Yes**

- a) *any applicant named in part 3 is not an inventor, or*
  - b) *there is an inventor who is not named as an applicant, or*
  - c) *any named applicant is a corporate body*
- See note (d)*

# Patents Form 1/77

- 9 Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document.

Continuation sheets of this form

Description

7

Claim(s)

Abstract

Drawing(s)

3 + 3

10. If you are also filing any of the following, state how many of each item.

Priority Documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*)

Request for substantive examination (*Patents Form 10/77*)

Any other documents  
(*Please specify*)

11. I/We request the grant of a patent on the basis of this application

Signature

Date



04.05.00

12. Name and daytime telephone number of person to contact in the United Kingdom

G Wood  
0113 2433824

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## Improvements to Communications Device

The invention which is the subject of this application relates to an improvement in a communications device and, in particular to a device of the type which includes a memory and capacity to have information or data input to the memory, retain the same and allow for the selective output or transfer of the information or data from the device to a remote location or other device.

In one form, the device is provided with a means for allowing the ability for a user in their premises to compile a list of data such as data relating to products for a shopping list and to then subsequently submit the data via a communication link to a retailer or supplier of the goods represented by the data and which supplier or retailer can then subsequently supply the goods to the user. Thus, in this instance, there is no need for the user to actually attend the supplier or retailer's premises. Furthermore, the retailer can download data to the device to allow the production of adverts, or other information, to the user via the device. It is also envisaged that in one embodiment the device is compatible with and used in conjunction with a broadcast data receiver of the type provided with a means to receive data broadcast from a remote location via satellite, cable and/or terrestrial broadcast systems and which receiver is also provided with means to allow the sending and receiving of data via a communications link such as by connection to a telecommunications network.

It is envisaged that this form of device will be used extensively by users due to the time savings, convenience and other benefits but, inevitably, there will be periods of time during which the device will not be in direct use for the intended purpose by the user. In these periods of time it is envisaged that the device will be retained in a holder or cradle and, during said time, a power source such as a

battery, or batteries, in the same can be charged via charging means in the cradle.

A further need of the device is for the display screen on the same to be provided with lighting means so that the display, and the material thereon is lit so as to allow relatively easy viewing of the same by the user. The device is intended to be used both portably and when in its holder and the aim of this invention is to provide effective lighting for the device without encumbering the device itself with expensive, economically unviable and high power utilisation, lighting but still provide the apparatus as a whole with at least one format of use in which effective lighting can be provided.

In a first aspect of the invention there is provided a device which allows for the input of data, the processing of data, storage of same in the device and selected communication of said data to a remote location either directly via a communications link or via a broadcast data receiver, and then via communications link, said device provided for location in a holder, and characterised in that said holder includes a light source, which light source is directed, when the device is placed on said holder, to provide improved lighting of the display screen of said device.

In one embodiment, the light source provided in the holder is in an off position or unlit condition, until the device is placed onto the holder which acts to enable the light source.

In one preferred embodiment, light guide means are provided between the holder and the device which serve to guide the light emitted from the light source in the holder into the device and onwardly onto the display so as to provide the desired lighting effect on the same. In one embodiment the light guiding means are Perspex or fibre optic guide means.

In another embodiment, when the device enables the light source in the holder, the light source is switched on. In another embodiment, when enabled, the light source may still not be provided in a lit condition until the same is switched on by the reception of the device by incoming data. Thus, the device may be positioned in the holder with the light source in an enabled but an unlit condition until, for example, data for an advert is received from a remote location or from a broadcast data receiver and said advert is generated on the display. At the same time, a signal is transmitted to the enabled light source in the holder and control means therefore cause the same to light and hence the material on the display screen is more clearly viewable. Furthermore, the change on the screen from unlit to lit will serve to attract the attention of the user of the device if they are in the vicinity of the same at the time of change.

Typically, the device itself will be provided with some form of back lighting for the display but the extent and level of illumination provided by the back lighting will be normally restricted by the constrictions of power consumption, size of the device and so on, and therefore the light source provided in the holder will typically provide an extra level of illumination. Reference hereonin to lit and unlit conditions of the device when in the holder refer to the illumination of the light source in the holder and not to the state of any lighting means which may be provided in the device itself.

In an alternative embodiment, the light source in the holder may be permanently switched on so that as soon as the device is placed in the holder, an improved display is provided and in some instances, it is envisaged that the user may simply place the device on the holder so as to more clearly view the display screen and use the

device and may do so at frequent intervals when actually using the device in the vicinity of the holder.

It is envisaged that the holder will also be provided with means for charging the power source of the device and other means and facilities including for example the provision of a speaker to allow audio reproduction via the holder.

A specific embodiment of the invention is now described with reference to the accompanying figures, wherein:-

Figure 1 illustrates the device of figure 1 in position on a holder in accordance with the invention; and

Figure 2 illustrates the holder in accordance with one embodiment of the invention;

Figure 3 illustrates the device of the invention in a holder in a stored condition.

Referring to Figure 1, there is illustrated a device according to the invention in one embodiment. The device 2 includes a housing which is encased a processing means which can include a memory for the storage of data which is input into the device, processing means to allow the data which is input to be stored in an appropriate manner, further processing and decoding means which allows data which is received from a remote location in an encoded format to be decoded and then processed, and a power cell which, typically, is rechargeable and which is provided to allow the device to be used independently of a holder or mains power supply. Also typically provided is a lighting means at the display screen which allows limited back lighting of the display screen 6 so as to improve the ability of the user to view the display material on the screen.



The device is provided to allow the input of data which can be in a number of forms such as, for example, the device may be provided with a barcode reader which allows the device to be placed in the vicinity of barcodes and products, and by reading the same, data relating to the product is input into the device and stored. There may be provided a keypad 4 and "pen" 5, as shown, which allows the user to input data into the device by typing in appropriate codes, words or the like and/or touching the screen with the pen to select displayed functions. The screen 6 also provides information to the user with respect to the operation of the device and other material such as advertisements and the like.

There is typically also provided at least one means of receiving data from a remote location such as, for example, an aerial which will allow, for example, radio broadcast to be received and alternatively, or in addition, the device can be provided to allow connection with a broadcast data receiver or other communication means, not shown, and in which connection can be achieved via a cable connection. If a broadcast data receiver is provided, the same is provided to allow the reception of broadcast data from a remote location and, from said data, which is typically transmitted from any satellite, cable or terrestrial system, a range of television programmes can be made available for selection by the user. In addition, the broadcast data receiver typically includes a further communications link, typically a telecommunications link, to a remote telecommunications network and a device, in a preferred embodiment, is provided to utilise this telecommunications link by connecting and communicating with the broadcast data receiver.

Thus, in use, it is envisaged that the device can be held in the hand by the user and can be separated from a holder for the same which can be provided to stand alone or may alternatively be provided as

part of another piece of apparatus such as, for example, a broadcast data receiver. The user can then input the data which is required, such as for example, data indicating those products which they wish to purchase from a particular retail outlet, and they may do so as they move around the house with the device, while they are out of the house with the device, and so on. The device 2 can also be used when mounted on the holder 10 as shown in Figure 1. In any case, the data which is input is stored in the device and, when needed, the device is connected to a communications link so that the data can be downloaded to a retailer or other organisation as required.

When not in use, the device will typically be required to be charged so that the power cell in the device is fully functional and all the features of the device can function. Typically the holder is provided which includes means for charging the power cell when the device is placed therein, and in accordance with the invention, the holder is further provided with at least one light source 12 and control means therefor and a mains power supply 11 as illustrated in Figure 2.

It is envisaged that when the device is in use and not placed in the holder then the light source of the holder will be unlit to save the life of the light source and also save power.

When the device is not in use and is in the holder as shown in Figure 3 or may be in use but is placed in the holder in any case as shown in Figure 1, the action of placing the device in position in the holder causes electrical connection between the device and the holder and, at the same time, causes the control means for the light source to be enabled. In one embodiment, this enablement causes the light source to be illuminated at that time or, alternatively and preferably, the light source remains in an unlit condition and is not illuminated until data is received for display on the display screen by the device when in the holder, at which stage the light will be

illuminated or the act of opening the screen from the position of Figure 3 to the in use position of Figure 1 causes each light source 12 to illuminate. Yet further, the light source may not be illuminated until the user of the device selects the same, either by control means on the device and/or the holder.

In any case, when the light source is illuminated, light guide means 14 are provided which pass from the light source to the device and serve to guide the light which is generated from the light source to the device and onto the display screen to either illuminate the same from the front or from the rear, as appropriate for the particular form of display screen used. This light augments any back lighting provided on the device itself, or alternatively, may replace the back lighting on the device if provided, for the duration of the device being placed in the holder but, in any case, the provision of the light source in the holder enables illumination of the display screen to a significantly greater extent than is possible when the device is not in the holder.

In turn, this means that the visual impact of the material of the display screen will be enhanced to the user, which is important, firstly because the device is in a stationary position in the holder and the user may wish to view the display screen from a further distance than would be the case if they were holding the device and, secondly, it allows the display screen of the device to be used to indicate material which is received by the device at unexpected times. Thus the increased illumination or, yet further, the change in condition from unlit to lit, when the data is received, serves to attract the user's attention to the display screen to view the material and this is especially important when the material is in the form of advertisements which obviously the provider would wish the user to view.

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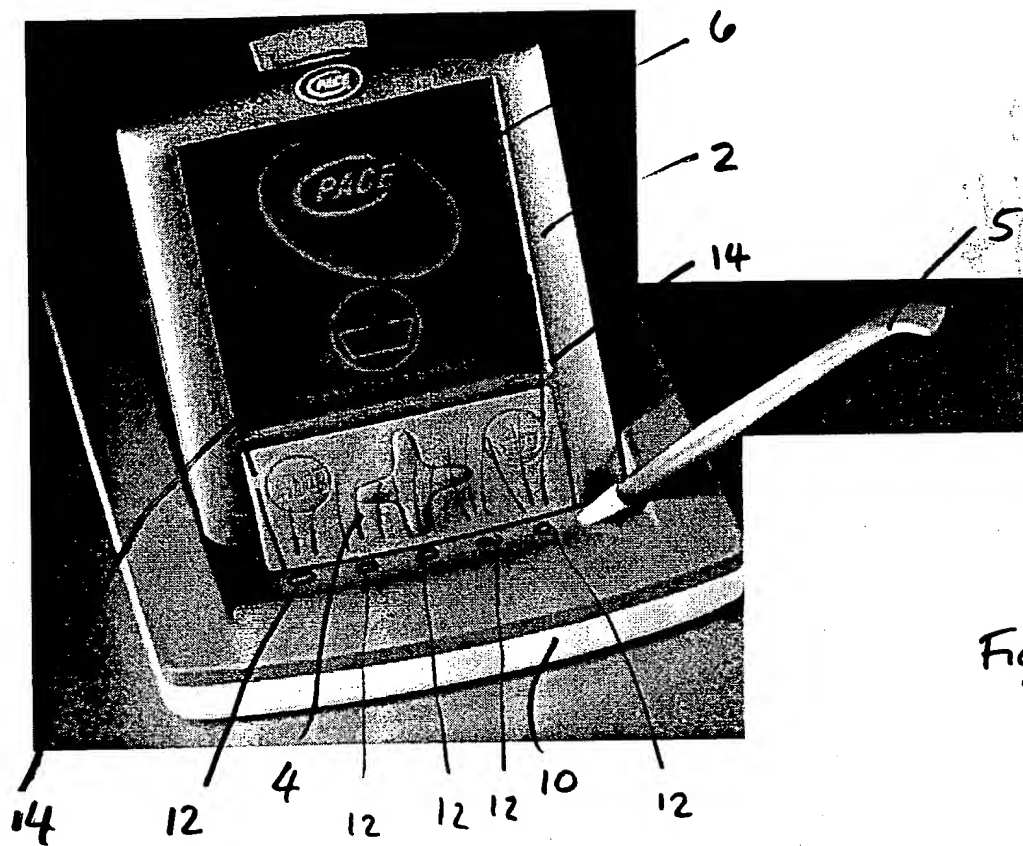


Figure 1

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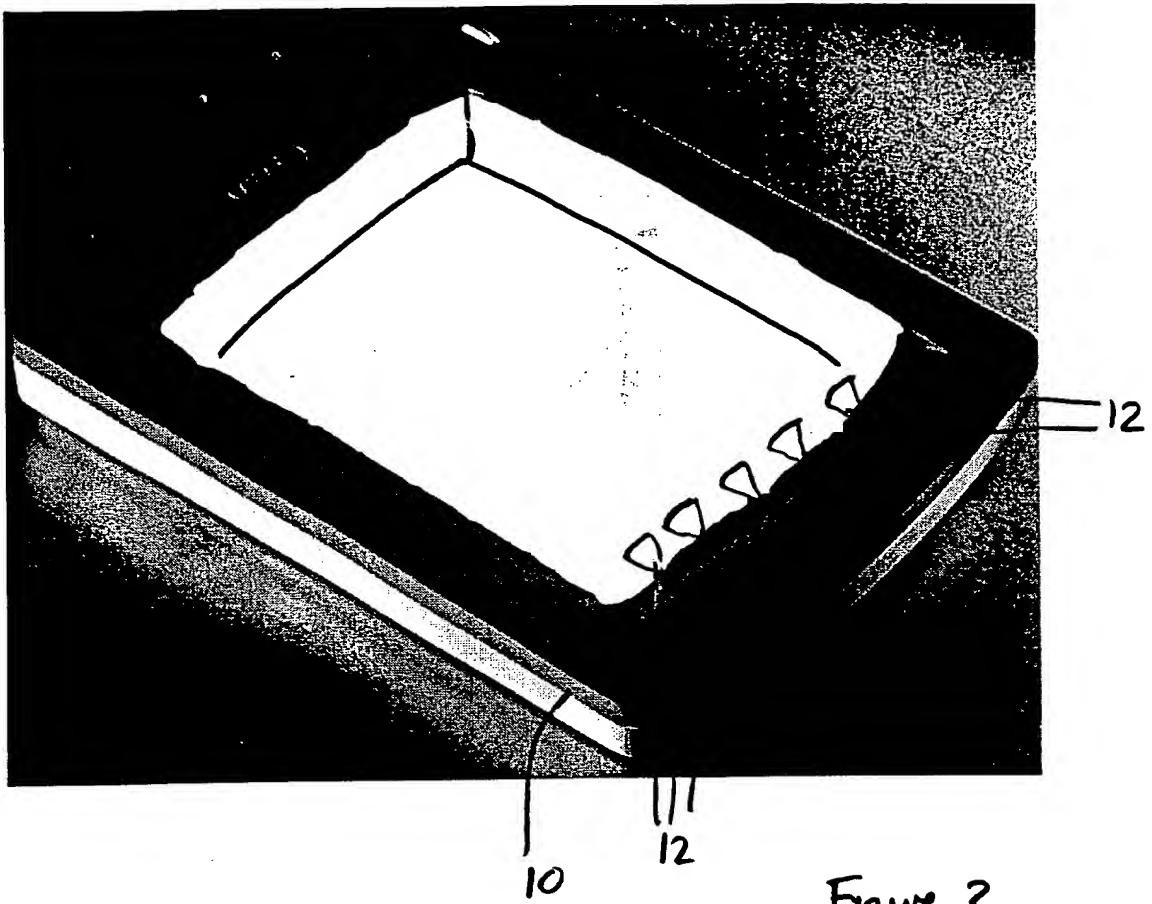
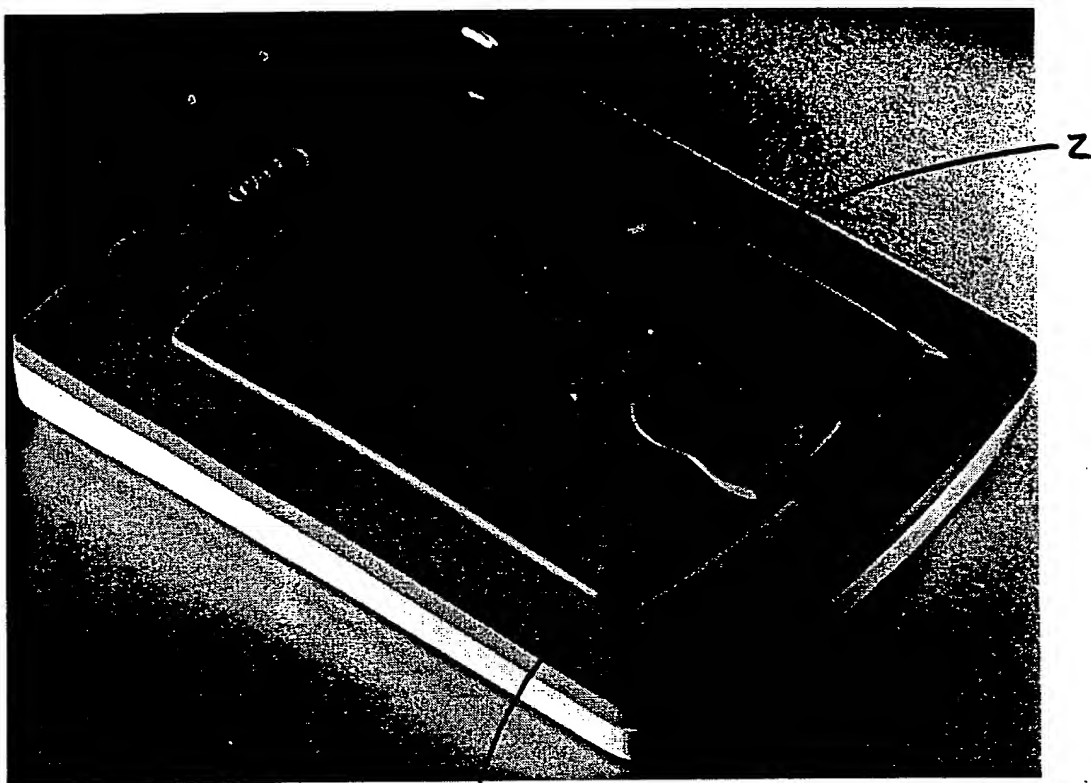


Figure 2

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Figure 3

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